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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,350	10/26/2001	Roger L. Schultz	SC-00-12	2238

29106 7590 12/03/2003

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DALLAS, TX 75230

EXAMINER

DANG, HOANG C

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,350

Applicant(s)

SCHULTZ ET AL.

Examiner

Hoang Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 8-10, 12-16 and 21 is/are allowed.
- 6) ☒ Claim(s) 7 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 17-20 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Dublin, Jr. (US 6,068,394).

As for claims 17 and 19, Dublin, Jr. discloses the step of "taking multiple strain measurements from an instrumented sub assembly" or "analyzing the relative strain induced on different parts of a bottom hole assembly during drilling (e.g., column 9, lines 23-56 and column 11, lines 11-55) and "deriving information regarding bit wear from relations between said respective measurements" or "predicting drill bit failure based on said relative strain" (see column 3, lines 15-16).

As to claims 18 and 20, the instrument sub 20 of Dublin, Jr. does not electrically communicate with the drill bit 22.

3. Claims 7 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Zaleski, Jr. et al (US 5,813,480).

Zaleski, Jr. et al disclose a system comprising a drill string (19) having a drill bit (26) and a plurality of strain sensors (e.g., 125, 127, 129). It is noted again that a preamble or/and an intended use are given no patentable weight.

As for claim 7, the claim does not require that the relative change in axial strain be between different sensors. In other words, the "relative change in axial strain" can be interpreted

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as relative change between different axial strain measurements from one strain sensor. Claim 7 therefore does not distinguish from Zaleski, Jr. (see column 11, lines 58-63).

As to claim 17, see column 9, lines 26-52 and column 11, line 52 through column 12, line 10.

Response to Arguments

4. Applicant's arguments filed August 18, 2003 have been fully considered but they are not persuasive. Applicant argues that Zaleski, Jr. et al do not show "a plurality of sensors on the lower end of a drill string" as required by claim 7 or "instrumented sub assembly" as called for in claim 17. This argument is invalid. Claim 7 does not require a drill bit separate from the drill string. Similarly, claim 17 does not require a drill bit separate from the instrumented sub assembly. In other words, the claims do not prevent the drill bit in Zaleski, Jr. et al from being considered as a part of the "drill string" (claim 7) or "instrumented sub assembly" (claim 17).

Allowable Subject Matter

5. Claims 1-6, 8-16 and 21 allowed.

Conclusion

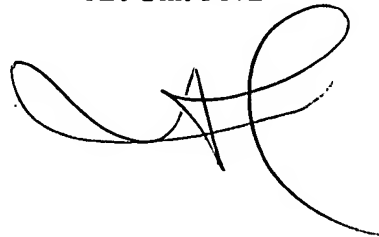
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Dang whose telephone number is 703-308-2149. The examiner can normally be reached on 9:15-5:45 Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

Hoang Dang
Primary Examiner
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A handwritten signature in black ink, appearing to be 'HD' with a large loop and a crossbar, positioned below the printed name and title.